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Migration statistics

Use of population censuses to collect statistics on international migration

Prepared by the United Nations Statistics Division

Summary

The paper examines national practices in collecting international migration statistics, by reviewing questionnaires the United Nations Statistics Division collected from the 2010 round of national population and housing censuses. It also provides an overview of the availability of migration statistics collected from censuses at international level and discusses challenges and opportunities of using census as a source of data on international migration.

The paper is presented for discussion to the Conference of European Statisticians seminar on migration statistics.

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I. Collecting international migration statistics from population censuses

1. Population census is a primary source of measuring migrant stock. Most countries collect and produce statistics on the stock of foreign-born and foreign population from population censuses. It is also possible to compile statistics on migration flows through population censuses by using information on change of residence. The use of two consecutive censuses to derive migration flow data for the interim period is well documented as well.

2. In the 2010 census round (2005-2014), 206 countries and areas out of a total of 235 (87 per cent) conducted a population census at least once. This paper is based on analysis of census questionnaires that are available for 148 countries and areas.

A. Collecting information on United Nations core international migration topics

3. The United Nations recommends that three core topics on international migration to be collected in a population census and they are country of birth; citizenship and year or period of arrival.[1]

4. The information of "country of birth" is usually collected by the question on place of birth, to capture the district or province (or other geographic division detail) if the person is born in the country, or the country of birth if the person is born abroad. Some countries/areas also ask the place of residence of the mother when the person was born, rather than the place of birth per se. This practice is followed to keep the place of birth of the person from being ascribed to the locality where his or her mother actually gave birth (where the hospital or health facility is located).

5. There is wide variation among countries in the way in which the question on citizenship is asked and in the degree of response space. Some countries (Australia, Democratic People's Republic of Korea, Maldives and South Africa) asked only whether the person is a citizen or not (i.e., a foreigner). The vast majority of countries ask for the person's country of citizenship if he or she is not a citizen of the country of enumeration, as recommended by the United Nations. Some countries that ask the question on citizenship include a category "stateless" or "without citizenship" in the pre-coded responses to ensure that this group of persons is categorized correctly. In many countries (mostly in Europe), the citizenship question allows the recording of a second country in the case of dual citizenship by providing a space for entering the name of the other country of citizenship. Some countries also included a question to allow distinction between citizens by birth and citizens by naturalization.

6. Another area of policy interest is to distinguish between recent migrants and those of longstanding. The United Nations recommends that year/period of arrival at the country be collected for persons born abroad. In national censuses, the question may be asked to foreign-born persons only or to persons who have lived abroad if returned migrants are also of policy interest. Whether the year or period refers to the most recent or the first arrival is not prescribed in the Recommendations and is left for countries to choose.

[1] Principles and Recommendations for Population and Housing Censuses, Rev. 2, United Nations, 2008

7. Table 1 shows the number and percentage of countries that asked questions on these three core topics. Of all the countries for which questionnaires are available for the 2010 round of population censuses, 96 per cent collected information on either on the country of birth or citizenship and 51 per cent on year or period of arrival. Country of birth is collected in more countries (88 per cent) than country of citizenship (76 per cent). There are, however, regional differences in the type of questions asked in population censuses. Country of birth is asked much more often than citizenship in North America, South America and Oceania, while in Africa, Asia and Europe citizenship these two topics are equally covered.

8. The coverage of year and period of arrival also varies by region. In North America, South America and Europe between 70 per cent and 80 per cent of the countries/areas under review asked question on year or period of arrival. The percentage is much lower for Africa and Asia. More than half of the countries/areas in Oceania asked question on period/year of arrival.

Table 1

Number and per cent of countries/areas covering the United Nations core topics on international migration, 2010 population census round

Region	Total countries	Country of birth		Citizenship		Country of birth or citizenship		Year/period of arrival	
		Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Africa	30	25	83.3	26	86.7	29	96.7	7	23.3
America North	24	22	91.7	12	50.0	22	91.7	20	83.3
America South	10	10	100.0	5	50.0	10	100.0	8	80.0
Asia	33	24	72.7	24	72.7	30	90.9	7	21.2
Europe	30	28	93.3	28	93.3	30	100.0	21	70.0
Oceania	21	21	100.0	17	81.0	21	100.0	12	57.1
Total	148	130	87.8	112	75.7	142	95.9	75	50.7

B. Collecting information on other international migration topics

9. Other international migration questions that have been asked in national population censuses include emigration of former household members; returned migrants; country of births of parents and previous residence abroad.

1. Emigration of former household members

10. Countries with high emigration rates are increasingly including questions on emigration in their censuses. The 2010 round of censuses witnessed a significant number of countries and areas (50) that have asked questions about former household members that are "emigrants", i.e., have left the country to live abroad. A few countries specified the period of absence as a criterion when listing emigrants. More than 50 per cent of the countries and areas in Africa and North America asked questions on emigration, while 40 per cent of those in South America, 33 per cent in Europe. The percentage is much lower in Asia and Oceania (18 per cent and 5 per cent, respectively).

11. After identifying the emigrants according to the country's specifications, the questionnaire gathers a limited number of relevant information on each emigrant, including age, sex, the year of departure and the destination country. Additional information is also

asked by some countries including reason for migration and education and occupation of emigrants, among others.

2. Returned migrants

12. Thirty-six countries and areas (24 per cent) collected data on return migrants in their population and housing censuses. Return migrants can be detected through a question in the census that asks all persons (or all native-born persons) if they have ever lived abroad, and if so, when they returned to live in the country. Majority of those 36 countries are in Europe and North America. In Europe, 63 per cent of the countries and areas collected information on returned migrants. The percent is lower in North America (33 per cent). The percentage is much lower in the other regions (Table 2). The list of countries and areas for which 2010 census questionnaires are analysed is provided as Annex 1.

13. A common question that has been asked of returned migrants is the country wherein the person last resided before returning/coming to the country of enumeration. A few countries have also included a question on reason(s) for emigration abroad and/or returning.

Table 2

Number and per cent of countries/areas covering other topics related to international migration, 2010 population census round

Region	Total countries/ areas for which questionnaires are analysed	Emigration		Returned migrants		Country of birth of parents	
		Number	Per cent	Number	Per cent	Number	Per cent
Africa	30	16	53.3	2	6.7	-	-
America, North	24	13	54.2	8	33.3	4	16.7
America, South	10	4	40.0	1	10.0	-	-
Asia	33	6	18.2	5	15.2	5	15.2
Europe	30	10	33.3	19	63.3	10	33.3
Oceania	21	1	4.8	1	4.8	5	23.8
Total	**148**	**50**	**33.8**	**36**	**24.3**	**24**	**16.2**

3. Country of birth of parents

14. There is a growing interest in the economic, cultural and social experience of the children of immigrants who are born in the destination countries, the so-called "second generation migrants". The identification of second-generation migrants requires that questions be asked on the place of birth of each respondent as well as place of birth of his or her parents. In the 2010 round of population and housing censuses, 24 out of 148 countries and areas asked questions on country of birth of parents. Among those 24 countries and areas, 10 are in Europe, 5 in Oceania and Asia and 4 in North America.

4. Previous residence abroad

15. Collecting information on previous residence, through either a single question on the previous place of residence at a specified time in the past or a set of two questions – place of previous residence and duration at current residence, is recommended by the United Nations for the study of internal migration in population censuses.

16. Through one of the above choices, a count of persons who reported previous residence as a place abroad and moved into the country before the census date can be derived. Note that such figure does not provide accurate data on immigrants because it does not capture immigrants who died or who had departed before the census date.

17. Almost all countries and areas analysed in this study included questions on previous residence of the person (Table 3). For South America and Oceania, all countries and areas included question(s) on previous residence, in one way or another. The coverage is a little lower in Africa, North America and Asia, with about 90 per cent of the countries and areas asked the question on previous residence. Europe has the lowest percentage, with about 77 per cent of countries and areas asking the question(s).

Table 3

Number and per cent of countries/areas covering previous residence, 2010 population census round

Region	# countries/ areas for which questionnaires are analysed	Asked question(s) on place of previous residence or place of residence at a specified time in the past	
		Number	Per cent
Africa	30	27	90.0
America, North	24	22	91.7
America, South	10	10	100.0
Asia	33	29	87.9
Europe	30	23	76.7
Oceania	21	21	100.0
Total	**148**	**132**	**89.2**

II. International migration statistics available at international level

18. The United Nations Statistics Division collects, from national statistical offices, census data through the United Nations Demographic Yearbook questionnaires on population censuses. Data for the following 7 tables are collected:

(a) Native and foreign-born population by age and sex;

(b) Foreign-born population by country of birth, age and sex;

(c) Foreign-born population (15 years and over) by educational attainment, country of birth and sex;

(d) Economically active foreign-born population by occupation, age and sex;

(e) Population by citizenship status, age and sex;

(f) Foreign population by country of citizenship by age and sex;

(g) Foreign population (15 years and over) by educational attainment, country of citizenship and sex.

19. Table 4 shows the numbers of countries and areas that have reported data to the United Nations Statistics Division on foreign-born population. Overall, 61 countries and areas (47 per cent of those asked questions on country of birth) have reported data on foreign-born population. The percentage is highest in Europe (71 per cent), followed by North America and Asia (50 per cent). In Africa, South America and Oceania, only around 30 per cent have reported data on total foreign-born population at the international level.

Table 4
Availability of data on foreign-born population, 2010 population census round

Region	# Countries asked question on country of birth	Native and foreign-born population		Foreign-born by country of birth		Foreign-born by educational attainment		Economically active foreign-born by occupation	
		Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Africa	25	7	28.0	3	12.0	1	4.0	3	12.0
America, North	22	11	50.0	9	40.9	6	27.3	5	22.7
America, South	10	3	30.0	2	20.0	1	10.0	2	20.0
Asia	24	12	50.0	7	29.2	4	16.7	4	16.7
Europe	28	20	71.4	16	57.1	11	39.3	8	28.6
Oceania	21	8	38.1	5	23.8	2	9.5	3	14.3
Total	**130**	**61**	**46.9**	**42**	**32.3**	**25**	**19.2**	**25**	**19.2**

20. Data on foreign-born population by country of birth are available at the international level for 42 countries and areas (32 per cent). Europe again has the highest percentage of reporting rate (57 per cent), followed by North America (41 per cent) and Asia (29 per cent). The rate of reporting is much lower for Oceania, South America and Africa.

21. Data classified further by educational attainment and occupation are only available for 25 countries and areas (19 per cent).

22. Among all countries and areas that asked questions on citizenship in 2010 round of censuses, 57 per cent have reported population data by citizenship status. About 80 per cent of those in Asia and Europe reported such data, while the reporting rate is much lower for other regions (40 per cent or less). When further breaking down data on foreigners by country of citizenship, the number of countries and areas that reported such data reduces to 41 (37 per cent). The number of countries and areas reported data on foreigners by educational attainment is only 20 (18 per cent) (Table 5).

Table 5
Availability of data on foreign population, 2010 population census round

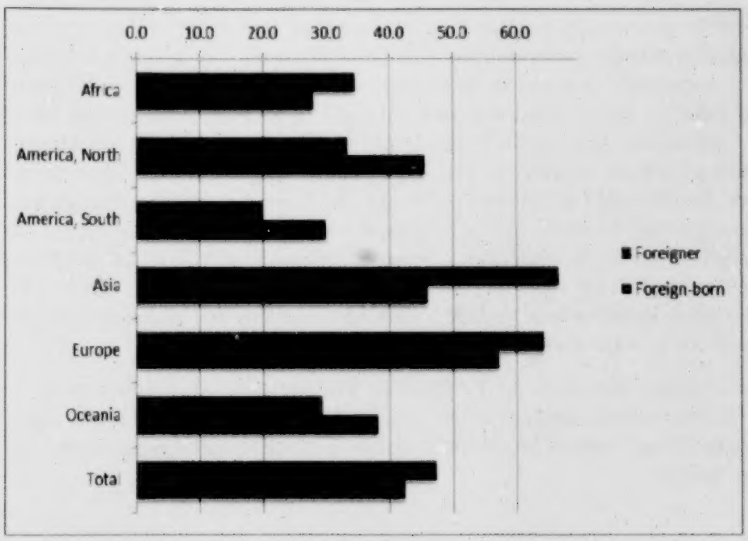
Region	# countries asked question on country of citizenship	Population by citizenship status		Foreigners by country of citizenship		Foreigners by educational attainment	
		Number	Per cent	Number	Per cent	Number	Per cent
Africa	26	10	38.5	8	30.8	1	3.8
America, North	12	4	33.3	3	25.0	2	16.7
America, South	5	2	40.0	1	20.0	1	20.0
Asia	24	19	79.2	9	37.5	4	16.7
Europe	28	23	82.1	17	60.7	12	42.9
Oceania	17	6	35.3	3	17.6	-	-
Total	**112**	**64**	**57.1**	**41**	**36.6**	**20**	**17.9**

23. Figure 1 illustrates the existing gap for international migration data obtained from population censuses. Ideally if a census includes question(s) on country of birth and/or citizenship, data on foreign-born and/or foreigners can be generated. However this is not always the case. For the 2010 round of population censuses, only 42 per cent of the countries and areas that included questions on country of births have reported data on foreign-born population to the *Demographic Yearbook*. Similarly in the same census round, only 47 per cent of the censuses that included questions on citizenship have reported data on foreigners.

24. The percentage of reporting varies by region, highest in Asia (46 per cent on foreign-born and 67 per cent on foreigners) and Europe (57 per cent on foreign-born and 64 per cent on foreigners) and much lower in other regions. For data on foreign-born population, the reporting percentage ranges from 28 per cent in Africa to 57 per cent in Europe. For data on foreigners, the reporting percentage ranges from 20 per cent in South America to 67 per cent in Asia.

Figure 1

Percentage of countries and areas having basic migrant stock data available to the United Nations *Demographic Yearbook*, 2010 population census round



III. Challenges and opportunities of collecting international migration statistics from population censuses

25. Population censuses have been used as a primary source for international migration statistics, especially on migrant stock. Advantages of using censuses to measure international migration are associated with the nature of population censuses. Universal coverage ensures better coverage of the migrant population. Relative uniformity in question formulations ensures better data comparability across censuses. Censuses collecting a variety of socio-demographic information imply that there is a potential for characterizing international migrants in terms of certain basic demographic and social-economic characteristics included in the census questionnaire.

26. On the other hand, censuses have a number of limitations in measuring international migration. First, data are less frequently available, usually once in ten years. This limits the

capability of population census in assessing recent migration patterns, which is the key interest of policy makers. Second, because censuses can accommodate only a limited number of questions related to migration, they cannot provide the detailed information needed for a meaningful analysis of either the causes or consequences of international migration. Third, the information on international flow of people obtained from population censuses, either through asking direct questions or indirectly using the census component methods, is usually incomplete and fragmented. Last, population census, by its very nature, cannot provide reliable information on emigration from a country.

27. Despite the limitations associated with population censuses in measuring international migration, they can be useful in providing information on the size and characteristics of international migrants. The above analysis shows that most national population censuses are adequate in capturing information on international migration through appropriate questions in the 2010 census round. Questions are mostly concentrated on the traditional United Nations core topics on international migration such as country of birth, citizenship and period/year of arrival in the country. Additional information is collected by some countries on emigration of former household members, returned migrants and country of birth of parents. The analysis also shows that one core question on internal migration – previous residence – have been asked by most countries and could also be used to derive certain information about immigrants in the past.

28. The key challenge that remains, therefore, is improving availability and accuracy of international migration statistics collected from population censuses. The first step in taking full advantage of population censuses is to tabulate the collected data and make them widely available. Figure 1 above shows that only 50 per cent of countries and areas have made their basic international migrant stock data available at international level, despite the fact that those information are collected in censuses. Data availability is even lower when tables are further disaggregated by country of origin (birth or citizenship), educational attainment and occupation. Secondly, for international migration data that are published less-frequently such as those on emigration, returned migrants and place of previous residence, not only should such data be made available to the public but also with accompanying documentations such as studies evaluating the quality and coverage of those data and information on how those data are used to inform policy makers.

29. Population censuses also have the potential in working with other data sources – sample surveys, administrative sources or other unofficial sources – to improve coverage, frequency and comprehensiveness of migration statistics. Further research and guidance in this area would be helpful.

Annex

List of countries and areas for which 2010 census questionnaires are analysed

Region	Country/area
Africa	Algeria
Africa	Botswana
Africa	Burkina Faso
Africa	Burundi
Africa	Cameroon
Africa	Cape Verde
Africa	Congo
Africa	Djibouti
Africa	Egypt
Africa	Ethiopia
Africa	Ghana
Africa	Guinea-Bissau
Africa	Kenya
Africa	Lesotho
Africa	Liberia
Africa	Malawi
Africa	Mali
Africa	Mauritius
Africa	Mayotte
Africa	Mozambique
Africa	Namibia
Africa	Nigeria
Africa	Réunion
Africa	Saint Helena
Africa	Seychelles
Africa	South Africa
Africa	Sudan
Africa	Swaziland
Africa	Togo
Africa	Zambia
America, North	Aruba
America, North	Bahamas
America, North	Barbados
America, North	Belize
America, North	Bermuda
America, North	Canada
America, North	Cayman Islands
America, North	Costa Rica
America, North	Curacao
America, North	Dominican Republic
America, North	El Salvador
America, North	Guadeloupe
America, North	Jamaica
America, North	Martinique

Region	Country/area
America, North	Mexico
America, North	Nicaragua
America, North	Panama
America, North	Puerto Rico
America, North	Saint Lucia
America, North	Saint Pierre and Miquelon
America, North	Sint Maarten (Dutch part)
America, North	Trinidad and Tobago
America, North	United States of America
America, North	United States Virgin Islands
America, South	Argentina
America, South	Bolivia (Plurinational State of)
America, South	Brazil
America, South	Colombia
America, South	Ecuador
America, South	French Guiana
America, South	Peru
America, South	Suriname
America, South	Uruguay
America, South	Venezuela (Bolivarian Republic of)
Asia	Afghanistan
Asia	Armenia
Asia	Azerbaijan
Asia	Bangladesh
Asia	Bhutan
Asia	Cambodia
Asia	China
Asia	Cyprus
Asia	Democratic People's Republic of Korea
Asia	Hong Kong SAR of China
Asia	India
Asia	Indonesia
Asia	Iran (Islamic Republic of)
Asia	Israel
Asia	Japan
Asia	Kazakhstan
Asia	Lao People`s Democratic Republic
Asia	Macao SAR of China
Asia	Maldives
Asia	Mongolia
Asia	Nepal
Asia	Philippines
Asia	Qatar
Asia	Republic of Korea
Asia	Saudi Arabia
Asia	Singapore
Asia	Sri Lanka
Asia	State of Palestine
Asia	Tajikistan
Asia	Thailand

Region	Country/area
Asia	Timor-Leste
Asia	United Arab Emirates
Asia	Viet Nam
Europe	Albania
Europe	Belarus
Europe	Bosnia and Herzegovina
Europe	Bulgaria
Europe	Croatia
Europe	Czech Republic
Europe	Estonia
Europe	Faeroe Islands
Europe	France
Europe	Germany
Europe	Gibraltar
Europe	Greece
Europe	Hungary
Europe	Ireland
Europe	Isle of Man
Europe	Italy
Europe	Jersey
Europe	Latvia
Europe	Liechtenstein
Europe	Lithuania
Europe	Luxembourg
Europe	Malta
Europe	Monaco
Europe	Montenegro
Europe	Romania
Europe	Russian Federation
Europe	Serbia
Europe	Spain
Europe	Switzerland
Europe	United Kingdom of Great Britain and Northern Ireland
Oceania	American Samoa
Oceania	Australia
Oceania	Cook Islands
Oceania	Fiji
Oceania	French Polynesia
Oceania	Guam
Oceania	Kiribati
Oceania	Marshall Islands
Oceania	Micronesia (Federated States of)
Oceania	New Caledonia
Oceania	New Zealand
Oceania	Niue
Oceania	Norfolk Island
Oceania	Northern Mariana Islands
Oceania	Palau
Oceania	Samoa
Oceania	Solomon Islands

Region	Country/area
Oceania	Tokelau
Oceania	Tonga
Oceania	Vanuatu
Oceania	Wallis and Futuna Islands